



INFLUENCE OF ANAPHYLACTIC SHOCK ON THE COURSE OF EXPERIMENTAL ANTHRAX

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INFLUENCE OF ANAPHYLACTIC SHOCK ON THE COURSE OF EXPERIMENTAL ANTHRAX

[Following is the translation of an article by N. A. Tsaregradskaya, Doctor of Veterinary Sciences, published in the Russian-language periodical Veterinariya (Veterinary Science), (Moscow) 1956, Vol 33, No 5, page 50 (Translation performed by Sp/7 Charles T. Ostertag Jr.)]

Our work dealt with the clearing up of the peculiarities in the course of experimental anthrax against a background of anaphylactic shock, causing sharp shifts in the activity of the vegetative nervous system and the cerebral cortex.

The tests were set up on guinea pigs in two variations. In the first variation the experimental animals received the Second Tsenkovskiy Vaccine just as soon as the apparent clinical signs of shock disappeared, that is, in 2-4 hours following the administration of the resolving dose of horse serum. In the second variation this same vaccine was administered in 2-3 days after the shock, when the blood indices in the animals had returned to the average initial values. Five guinea pigs each were used in both variations of the tests and in the control. Subcutaneously they were administered an 0.05 ml dose of the Second Tsenkovskiy Vaccine in the area of the scapula.

Following infection the test and control animals remained under our observation until their death.

The corpses of the dead animals were immediately autopsied and subjected to bacteriological investigation.

These experiments showed that both the test and the control animals died from anthrax, but in the test animals death set in later periods. The guinea pigs in the first test variation remained alive the longest period of time; they lived an average of 126 hours.

In the second variation of the test the death of the guinea pigs set in more rapidly, and on the average they died in 95 hours following infection. Guinea pigs in the control group died in an average of 47 hours.

In comparing the data obtained it is not difficult to establish that the control animals died almost three times more rapidly than the test guinea pigs of the first variation and two times more rapidly than test pigs of the second variation. Guinea pigs of the first variation lived an average of 31 hours longer than test animals of the second variation.

This manifestation, in our opinion, can be explained by the fact that the influence of anaphylactic shock in the test animals developed an inhibition of the excitable processes on the central nervous system, in connection with which there was a lowering of their susceptibility to the anthrax causative agent and the development of the infectious process was held back. In the light of this assumption it is easy to understand why the control animals died two to three times more rapidly than the test animals and why guinea pigs of the first variation of the tests lived longer. They were infected after the disappearance of the clinical signs of shock, when the inhibition of excitable processes of the central nervous system was expressed most intensively.

Conclusions :

1. Anaphylactic shock extends the living period of guinea pigs during experimental anthrax by 2-3 times in comparison with the control.
2. During the administration of Second Tsenkovskiy Vaccine soon after the disappearance of shock symptoms, the period of survival of the test animals was increased by three times. When the Second Tsenkovskiy Vaccine was administered after 2-3 days following shock, the period of survival of the test animals was increased by two times.